

REMARKS

Reconsideration of this application, as presently amended, is respectfully requested. Claims 1, 4-10 and 12-21 are pending in this application. Claims 1, 4, 16 and 17 stand rejected. Claims 5-10, 12-15 and 18-21 were withdrawn from consideration as being directed to a non-elected invention.

Rejections In View of the Prior Art

Claim 1 is rejected under 35 U.S.C. §102(b) as being anticipated by **Beller** (USP 3,920,903, previously cited). Claims 1 and 4 are rejected under 35 U.S.C. §102(e) as being anticipated by **Rothenberg** (USP 6,358,055). Claim 16 is rejected under 35 U.S.C. §103(a) as being unpatentable over **Rothenberg** in view of **Merzenich et al.** (previously cited). Claim 17 is rejected under 35 U.S.C. §103(a) as being unpatentable over **Rothenberg**. For the reasons set forth in detail below, these rejections, to the extent that they are considered to apply to the amended claims, are respectfully traversed.

The Beller reference

Initially, it is noted that U.S. Patent 3,920,903 to **Beller** was previously applied against claim 1 in the January 2, 2003 Office Action. (Also, **Merzenich et al.** was applied in the previous Office Action.)

Beller discloses a speech training device that filters a subject's speech to provide a therapeutic effect. More specifically, as shown in Fig. 1, in operation of the **Beller** device, a

subject inputs speech via a microphone 1 into which the subject speaks to generate voice electrical signals corresponding to the speech (alternatively a tape recorder 2 can be used to generate speech). The electrical signals from the microphone 1 are input to a preamplifier 3 to amplify the signals. The output of the preamplifier 3 is connected to the output of one of two high-pass filters 4, 5, which serves to attenuate the low frequencies of the voice electrical signals, via filter switches 6, 7 controlled by a speech therapist.

The subject (trainee) is treated for language defects as follows: (1) for 6-12 one-hour sessions, the subject listens to his voice after it has been filtered by filter 4 (col. 3, lines 17-18 and 25-26); (2) during the next 10 sessions, the filter 4 is used to filter the subject's speech during the first half hour of the session, and the filter 5 is used to filter the subject's voice during the second half hour of the session (col. 3, lines 29-32); and (3) training is completed during 20 or more one-hour sessions during which only filter 5 is used to filter the subject's speech.

In response to the January 2, 2003 Office Action (see March 26, 2003 Amendment), applicants argued that **Beller** does not disclose alternating processed sound with unprocessed sound. In the current Office Action, the Examiner indicates that silence when a trainee is *not in a training session* (i.e., between sessions) meets the claim recitation "alternating said region attenuation processed sound with at least one of silence and said original sound" (see page 2 of Office Action).

Claim 1 has been amended to recite that the alternating of the region attenuation processed sound with at least one of silence and the original sound *occurs during a training session*.

As the Office Action indicates, the Examiner is interpreting **Beller** such that a silent period *between sessions* (i.e., “when not in a session”) corresponds to the claimed “alternating ...with ...silence.” However, **Beller** does not disclose or suggest alternating the trainee listening to said region attenuation processed sound and at least one of silence and said original sound during the training session.

The Rothenberg reference

Rothenberg discloses a method and apparatus for teaching prosodic features of speech, such as sound intensity (loudness), intonation, variations in rate of speech, etc. Each prosodic variable that is the subject of instruction is superposed or modulated onto a either a periodic tone waveform, or a noise-like signal, so that during replay of this modulated tone, or noise, the user can hear the variation of the modulating variable without interference from articulatory features of the complete voice waveform.

The Examiner cites Fig. 4 of **Rothenberg**, which includes one or more sensors 1, such as a microphone, from which one or more prosodic variables (e.g., intonation frequency, sound intensity) can be extracted (col. 3, lines 27-31). A segment storage and replay device 5, such as a digital memory of a digital computer, receives the output of the microphone and can store a waveform of original speech 14 for replay (col. 5, lines 7-12).

A prosodic variable extractor 3, including an articulatory variation remover 40 and a prosodic variation measurer 41, receives the output of the segment storage and display device 5. *The articulatory variation remover 40 removes, or attenuates, any articulatory information in*

the sensor output 2, while retaining prosodic parameters to be taught. The prosodic variation measurer 41 determines the values of the prosodic variables at the output 31 of the articulatory variation remover 40. See col. 5, lines 22-30.

When the sensor 1 is an electroglottograph or throat microphone, the articulatory variation remover 40 for preserving intonation frequency can be a bandpass filter encompassing the lowest and highest intonation frequencies (50 to 300 Hz for men and 75 to 450 Hz for women). See col. 5, lines 60-64. Thus, the articulatory variation remover 40 apparently passes frequencies in the given ranges, while attenuating other frequencies.

*Further, as indicated in column 6, lines 4-7 of **Rothenberg**, a switch 15 allows a user to listen to the original sound instead of the processed sound.*

However, **Rothenberg** is silent with respect to an auditory sense training method having a step of alternating between a region attenuated processed sound and an original sound during a training session, as recited in claim 1. **Rothenberg** does not suggest a training method. **Rothenberg** only mentions a switch to listen to an original sound instead of a processed sound, and does not disclose or suggest alternating the region attenuated processed and the original sound during a training session.

A rejection under §102 requires that each and every feature recited in the claims must be disclosed exactly as claimed. **Rothenberg** does not disclose each and every feature as claimed, and therefore the rejection under §102 is improper and should be withdrawn.

The Merzenich et al. reference

The **Merzenich et al.** reference was discussed on detail in previous responses. See, for example, the Amendment filed March 26, 2003. Those remarks submitted in the previous responses are hereby incorporated by reference.

It is submitted that **Merzenich et al.** do not disclose or suggest the features recited in independent claim 1 that are missing from the **Beller** and **Rothenberg references**, and therefore the reference does not alleviate the deficiencies of **Beller** or **Rothenberg**.

In view of the above amendments and remarks, claim 1, and claims 4, 16 and 17, which depend from claim 1, patentably distinguish over the cited prior art and define allowable subject matter.

CONCLUSION

In view of the foregoing amendments and accompanying remarks, it is submitted that all pending claims are in condition for allowance. A prompt and favorable reconsideration of the rejection and an indication of allowability of all pending claims are earnestly solicited.

If the Examiner believes that there are issues remaining to be resolved in this application, the Examiner is invited to contact the undersigned attorney at the telephone number indicated below to arrange for an interview to expedite and complete prosecution of this case.

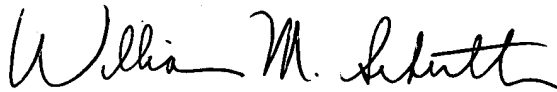
Application No. 09/159,104
Group Art Unit: 2644

Amendment under 37 C.F.R. §1.111
Attorney Docket No.: 981091

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

A handwritten signature in black ink, appearing to read "William M. Schertler". The signature is fluid and cursive, with the first name "William" being the most prominent part.

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